

CablesPlus

NEC Cable Fire Ratings Guide

Scope:

Cable fire ratings are something often overlooked when your cable purchase is made, only to be scrutinized by building inspectors after the installation. The National Electric Code articles 700-800 specify flammability ratings for certain installation situations, but muddle the issue by allowing substitutions to be made among their rating systems. The purpose of this document is to provide some degree of clarity in deciding which rating is appropriate for your installation environment.

Plenum:

A Plenum is defined as any enclosed area that facilitates environmental air handling. An example would be an air conditioning duct or an air routing drop ceiling. However, a plenum can be any air space between walls, under floors, or above non air handling dropped ceilings if duct work is not sealed correctly. Plenum cables are held to the most stringent testing of any of the cables rated by the NEC, rated for both flammability and smoke generation.

	Plenum Rating Codes
Signaling	CL2P
Optical Fiber	OFNP
Communications	CMP
COAX/Antenna	CATVP

Riser:

Riser cables do just what their name suggests, they rise between floors. Riser cables may also penetrate either fire rated walls or floors. The cables are subjected to flame tests only, and are not held to as high of a standard as Plenum rated cables. Plenum cables may be substituted for Riser.

	Riser Rating Codes
Signaling	CL2R
Optical Fiber	OFNR
Communications	CMR
COAX/Antenna	CATVR

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General Purpose:

General Purpose cables may be used anywhere in commercial buildings other than areas where Riser or Plenum cables are required. The cables are flame tested and held to a lower standard than either Riser or Plenum cables. Both Plenum and Riser rated cables are acceptable substitutes for General Purpose rated cables.

	General Purpose Rating Codes
Signaling	CL2
Optical Fiber	OFN
Communications	CM
COAX/Antenna	CATV

Residential:

Residential rated cables are rated for use in homes, though they may be used in commercial buildings if conduits included with the installation. Residential Cables are held to a lower standard than any of the other 3 types. Plenum, Riser, and General Purpose rated cables may be substituted for Residential rated cables.

	Residential Rating Codes
Signaling	CL2X
Optical Fiber	N/A
Communications	CMX
COAX/Antenna	CATVX

Low Smoke Zero Halogen:

Low Smoke Zero Halogen (LSZH) Cables have been developed to eliminate toxic gasses produced when water interacts with substances released when a cable's jacket burns. They are recommended for use in enclosed areas with little ventilation or in areas where sensitive equipment could be damaged. While required in many situations by European standards (RoHS), LSZH is not an NEC; rather it's an indicator of the jacket and insulator chemical makeup. Cables may be rated Riser or General Purpose in addition to designated as LSZH.